

## CLAIMS:-

1. A recombinant polyepitope cytotoxic T lymphocyte vaccine, the vaccine comprising at least one recombinant protein including a plurality of cytotoxic T lymphocyte epitopes from one or more pathogens, wherein the at least one recombinant protein is substantially free of sequences naturally found to flank the cytotoxic T lymphocyte epitopes.
2. A recombinant polyepitope cytotoxic T lymphocyte vaccine as claimed in claim 1 in which the at least one recombinant protein does not include sequences naturally found to flank the cytotoxic T lymphocyte epitopes.
3. A recombinant polyepitope cytotoxic T lymphocyte vaccine as claimed in claim 1 or claim 2 in which recombinant protein includes at least three cytotoxic T lymphocyte epitopes.
4. A recombinant polyepitope cytotoxic T lymphocyte vaccine as claimed in any one of claims 1 to 3 in which the cytotoxic T lymphocyte epitopes are from multiple pathogens.
5. A polynucleotide including at least one sequence encoding a plurality of cytotoxic T lymphocyte epitopes from one or more pathogens, wherein the at least one sequence is substantially free of sequences encoding peptide sequences naturally found to flank the cytotoxic T lymphocyte epitopes.
6. A polynucleotide as claimed in claim 5 in which the at least one sequence is free of sequences encoding peptide sequences naturally found to flank the cytotoxic T lymphocyte epitopes.
7. A polynucleotide as claimed in claim 5 or claim 6 in which the at least one sequence encodes at least three cytotoxic T lymphocyte epitopes.
8. A polynucleotide as claimed in any one of claims 5 to 7 in which the at least one sequence encodes cytotoxic T lymphocyte epitopes are from multiple pathogens.

9. A nucleic acid vaccine, the vaccine comprising the polynucleotide as claimed in any one of claims 5 to 8 and an acceptable carrier.
10. A vector including the polynucleotide as claimed in  
5 any one of claims 5 to 8.
11. A vector as claimed in claim 10 in which the vector is selected from the group consisting of vaccinia vectors, avipox virus vectors, bacterial vectors, virus-like particles (VLP's) and rhabdovirus vectors.
- 10 12. A vaccine formulation, the vaccine formulation comprising the recombinant protein as claimed in any one of claims 1 to 4 and an acceptable carrier and/or adjuvant.
13. A vaccine formulation as claimed in claim 12 in  
15 which the formulation includes ISCOMs.